

REMARKS

The above Amendments and these Remarks are in reply to the Office Action mailed March 7, 2003. Currently, claims 1-10 and 12-20 are pending.

I. Summary of the Rejections

Claims 1, 4-10, 12 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 5,992,233 (Clark) or U.S. Patent 6,250,156 (Seshia et al.) or U.S. Patent 6,296,779 (Clark et al.).

Claims 2-3 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over either U.S. Patent 5,992,233 (Clark) or U.S. Patent 6,250,156 (Seshia et al.) or U.S. Patent 6,296,779 (Clark et al. ('779)) in view of U.S. Patent 6,230,563 (Clark et al.('563)).

II. Summary of the Amendments

No amendments to the claims are presented.

III. Remarks

It is respectfully submitted that claims 1, 4 – 10 12 and 20 are not anticipated by Clark, Seshia et al. or Clark et al. ('779). The assertion of the content of the disclosure of the references is not supported, and indeed directly contradicted by the written description of the reference.

In particular, the Examiner's reliance on Figures 6 – 10 as showing "...at least one second finger is substantially closer to one of the two first fingers between which said at least one second finger terminates..." as defined in claim 1, 4, and 20 is contradicted by the written disclosure in the prior art which describes such Figures.

Initially, it is noted that Clark et al. ('779) and Seshia et al. are continuations in part of Clark, and the disclosure relied upon by the Examiner in rejection of the feature is the same in each patent. That is, Figures 6 – 10 and the text describing them appears identical in all three patents.

As understood, the Examiner relies on the Figures 6 – 10 as showing "at least one second finger extends parallel to the first displacement axis such that the one second finger terminates between the two first fingers wherein the one second finger is substantially closer to one of the two first fingers ..." (Office Action, Page 2, Paragraph No.2 (Second paragraph thereof)).

While it appears that, for example, Finger 76a is closer to finger 38 than Finger 74a, the specification makes abundantly clear that this appearance is not the construction of the device:

Stationary sensing electrode 62 includes a plurality of long fingers 70. Each long finger 70 protrudes from a base 72. The fingers of stationary sensing electrode 62 are arranged in pairs, each pair including a right finger 74 and a left finger 76. Each long finger 70 may be approximately one hundred and fifty microns in length, and have a width of approximately four microns. (Col. 6, ll 1 – 8 in Clark).

...

The spacing, Y_0 between fingers 70 and fingers 38 may be approximately one micron... (Col 6 lines 44 – 45 of Clark).

Hence, the written description makes clear that the distance between the fingers 70 (which per the above quoted section includes fingers 74a and 76a) is the same --one micron.

That the distance between the fingers is intended to be equal is verified by the equation describing the application of electrostatic balancing force. This equation makes clear that there is only one distance – Y_0 – which is factored into this application:

$$F_y = \frac{C_{\text{overlap}}}{y_0} x(t) \cdot ((V_{DC} + \Delta V)^2 - (V_{DC} - \Delta V)^2) = 2 \frac{C_{\text{overlap}}}{y_0} V_{DC} \Delta V \cdot x(t)$$

(Col 8, lines 45 – 49 of Clark)

Note that this formula appears in all three references. This is in contrast with the application the quadrature correction force in the present application, where the different distances (Y_0 and Y_1) are accounted for:

$$F_Y(x) = \frac{\epsilon_0 Z_1 x}{2} \left(\frac{1}{Y_2^2} - \frac{1}{Y_1^2} \right) V^2 = \underbrace{\frac{\epsilon_0 Z_1 X_1}{2} \left(\frac{1}{Y_2^2} - \frac{1}{Y_1^2} \right) V^2}_{\text{Static Force}} - \underbrace{\frac{\epsilon_0 Z_1 dx}{2} \left(\frac{1}{Y_2^2} - \frac{1}{Y_1^2} \right) V^2}_{\text{Force Proportional to Displacement}}$$

Hence, in the present rejection, the Clark, Seshia et al. and Clark et al. ('779) references do not teach that which the Examiner alleges they teach, namely

a second finger set comprising at least one second finger, ..., wherein said at least one

second finger is substantially closer to one of the two first fingers between which said at least one second finger terminates;

as defined in claim 1, 4 and 20.

Hence, since each and every element of the claimed invention, and in particular the “second finger set” defined in claims 1, 4 and 20, is not present in Clark, Seshia et al. or Clark et al. (‘779). It is therefore respectfully submitted that claims 1, 4, and 20 are not anticipated by Clark, Seshia et al. or Clark et al. (‘779).

It is further respectfully submitted that claims 5 – 10, dependent on claim 4 are likewise not anticipated by Clark, Seshia et al. and Clark et al. Each of claims 5 – 10 includes limitations of claim 4 and additional limitations and hence is not anticipated.

It is further respectfully submitted that claims 2 – 3 and 13 – 19 are not obvious in view of Clark, Seshia et al. or Clark et al. (‘779) in view of Clark et al. (‘563).

It is respectfully submitted that the prior art fails to teach a critical feature of the present invention, namely the “second finger set” set forth above. One of average skill in the art with knowledge of the Clark, Seshia et al. and Clark et al. (‘779) references could not be led to construct the invention as the references fail to teach a fundamental feature of the invention. Hence, it is respectfully submitted that claims 2 – 3 and 13 – 19 are not obvious.

In view of the above Amendments and Remarks, reconsideration of claims 1-10 and 12-20 is requested.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 501826 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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